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ABSTRACT

Designed to further the movement of Minnesota's schools toward an outcome-based system, this publication offers: (1) a definition of outcome-based education (OBE); (2) a brief history of Minnesota's involvement in the development of OBE; and (3) a set of terms and definitions for OBE in Minnesota. In addition, the document describes OBE as envisioned by Minnesota's Legislature, State Board of Education, and Department of Education. Concepts defined and discussed include learner goals, program outcomes, concept outcomes, essential learner outcomes, course grade outcomes, unit outcomes, lesson outcomes, graduation requirements, assessment and feedback, statewide testing, the test item bank, and instruction. Concluding discussion concerns instructional planning, implementation, and evaluation. (RH)

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A MINNESOTA VISION FOR

OBE

OUTCOME BASED EDUCATION

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Outcome Based Education

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INTRODUCTION

Minnesota is evolving step by step into an outcome based education system. To assist in that regard, this publication will:

- Provide a definition of outcome based education
- Provide a brief history of Minnesota's involvement in the development of outcome based education
- Describe outcome based education as envisioned by the Minnesota Legislature, State Board of Education, and Department of Education
- Provide a set of terms and definitions for outcome based education in Minnesota.

WHAT IS OUTCOME BASED EDUCATION?

Outcome based education is programs designed and implemented in a manner that assures alignment of three basic elements: Learner Outcomes, Assessment and Feedback Process, and Instructional Process. (See Figure 1)

ELEMENTS OF OUTCOME BASED EDUCATION

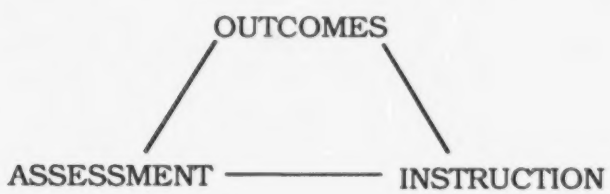

Figure 1

HISTORY The seeds for outcome based education (OBE) were planted by the Minnesota State Legislature in the mid 1970's with the Planning, Evaluating, and Reporting (PER) process. Initially, that process required districts to establish learner goals, evaluate results, report results to the community, and develop program improvement plans for areas that evaluation results indicated needed improvement. Subsequent changes require that districts develop learner outcomes for every grade level, implement a six year or less curriculum review cycle, assess each subject area on that cycle using a Department-developed process, report results, and develop program improvement plans as before. The Legislature also funded the Minnesota Department of Education to develop a sampling procedure to assess student progress statewide and to develop an assessment item bank for district use.

As part of this evolution, in 1983 the Department began active study and development of a vision for OBE. Development of an OBE model grew out of several meetings held to create a Minnesota response to national reports such as, "A Nation at Risk" which depicted public education as outdated and ineffective.

Early response to Department action from school districts was positive and included the request to help them see how "it" all fit together—the "it" being the seemingly disjointed group of activities, assignments, and mandates emanating from the State Board, State Legislature, and the federal congress, including PER, the Minnesota Educational Effectiveness Program, technology plans, and Chapter I.

In answer to that request, the Department created a model for public education called the Coordinated Model for Educational Improvement. That model incorporated the following eight activities under which all district activities fit:

- Planning, evaluating, and reporting to the local community
- Defining expectations (goals and outcomes) for students
- Assessing student progress toward those expectations

- •Designing instruction that leads to achievement of the expectations
- •Dealing with individual parent/student abilities and aspirations
- •Staff development
- •Partnership activities
- •Management of the educational enterprise

The Coordinated Model demonstrated how all of the various initiatives fit together. Materials written about the model emphasized that its greatest benefit could be realized if districts would use the materials to complete the various tasks once rather than once for every program. None of those activities were new or unique, and in fact had each been developed several times by each district in the context of a variety of programs. (Please note: three of the activities; outcomes, assessment, and instruction are the three elements of OBE.)

Upon completion of the Coordinated Model, the Department began working directly on OBE. One of the early steps was a funding request to the Legislature to develop model learner outcomes for discretionary district use. The Legislature approved this request and tied the learner outcomes into the PER process as a resource for districts in developing outcomes at all grade levels.

The Minnesota State Board of Education, when asked to develop and adopt learner goals, became increasingly interested in working with districts on the basis of OBE rather than existing "input" rules. The Board approved sixteen sites as pilot demonstration programs for the implementation of OBE based on the Coordinated Model. From that came an evaluation which identified seven elements critical to successful district implementation of OBE.

- •Board, administrative, and teacher support
- •A long-term commitment of time and resources

- Assigned and recognized responsibility and authority for managing the transition to OBE
- A documented plan for developing and involving staff
- A process for including parents and students in the development and implementation stages
- A structured/standardized process, across all subject areas, for developing outcomes, assessment procedures, and instructional strategies
- A system for evaluating the program to be developed, documented, and implemented.

Although reached by separate paths, the Legislature, State Board, and the Department have independently concluded that a movement into OBE would address the need to transform and improve Minnesota's public education system. Outcome based education meets Minnesota's needs for improvement, based on the following:

- Outcome based education presumes that all students can learn and have success, that success breeds success, and that schools control the conditions for success.
- Outcome based education prescribes content in terms of learner outcomes (what is to be learned) rather than in terms of a course syllabus (what is to be taught).
- Outcome based education presumes the use of criterion-referenced assessment procedures. Such assessment procedures are specifically developed to measure student progress on the predetermined outcomes rather than using norm-referenced tests that may or may not measure achievement on the predetermined outcomes.
- Outcome based education presumes an instructional design based on a model in which learning is the constant and time the variable rather than the existing design in which time is the constant and learning the variable.

It should be noted that prior to any formal state-level involvement in OBE, a number of schools and school districts were making, and are continuing to make, strides in the implementation of OBE programs. Much of the Department's work was and is based on their findings.

BARRIERS TO OUTCOME BASED EDUCATION

Based on the experiences of a number of schools in Minnesota and across the nation, and on Departmental experience to date, the following issues or perceived barriers to implementation of OBE have been identified. It is believed that the State, each district, and each site will have to address them before and during the process of designing and implementing its OBE system.

- Demonstration of Need - There are numbers of community supporters and school staff who believe, "if it ain't broke don't fix it." They believe that our system is as effective today as it was when they were in school. Some believe we should go back to the three R's. Regardless of their beliefs, efforts must be extended to convince them of the need.

- Timing - Movement must be sufficiently fast in the transformation process to satisfy those pressing for immediate change in the public education system and sufficiently slow to effectively train and involve individual stakeholders in the transformation process.

- Acceptance of Change - All stakeholders; students, parents, teachers, principals, administrators, boards, community supporters, the Legislature, and the Department, must be convinced of the need and involved in the design of changed roles (possibly including licensure changes) for all connected individuals.

- Time - Sufficient time must be provided before and during the transition period for staff to be trained in the skills needed and to write/create the needed assessment and instructional designs.

- Creativity - Professional educators must demonstrate that they possess the flexibility and technical creativity to design and implement instructional models that will work for all students.

- Resources - While it is projected that full implementation of instruction based on OBE principles is no more costly than implementing the current educational model, the transition from the current model to OBE will require additional resources for training and design activities.

TERMINOLOGY

While the terminology and concepts inherent to OBE are becoming widespread in their use, they are inconsistently used and understood. Outcome based education, as developed nationally, is precise in the use and meaning of its terminology. The Department has adapted that language to match the needs and directions emerging through actions of the State Legislature and the State Board of Education. With the advent of both legislative and State Board of Education initiatives and mandates regarding OBE, adoption of a single, agreed upon set of language and design features is critical.

DEFINITIONS

Outcome Based Education Education programs designed and implemented in a manner that assures alignment of three basic elements: Learner Outcomes, Assessment and Feedback Process, and Instructional Process.

Some Essential Learner Outcomes (SELOs) The first generation documents developed by the Department (1976-84) to identify some learner outcomes in each subject area. Developed for districts to use at their discretion.

Model Learner Outcomes The second generation effort of the Department to develop outcomes in each subject area. All subject areas use the State Board learner goals as a reference point, and the same language, criteria, definitions, and format. They include learner goals, program level learner outcomes, concept learner

outcomes, and essential learner outcomes, and are a recommendation for a full K-12 program in the subject area. Use of these documents is discretionary now for districts, although the State Board is in the process of adopting parts in rule.

LEARNER OUTCOMES

TERMS

Learner Outcome A knowledge, skill, or affect to be developed by learners as a result of active participation in a planned learning experience. Outcomes are needed at several levels of specificity, from most general to most specific. (See Figure 2) Cognitive outcomes, at every level of specificity, are included that identify abilities at the following levels:

Evaluate, Evaluation or Judging The student develops the ability to make judgments about the value of something, using either internal criteria (provided or established) or external criteria (comparing one body of knowledge to another).

Synthesize or Synthesis The student develops the ability to put together parts from a single body of knowledge or from several bodies of knowledge to form a new whole.

Analyze or Analysis The student develops the ability to: break an idea, principle, rule, or fact into its element parts; recognize unstated assumptions; check consistency of hypothesis with existing information; and recognize the use of propaganda techniques.

(The term *integrating* is used by the Department to imply outcomes that result in evaluation, synthesis, or analysis levels of learning.)

Apply, Applying, or Application The student develops the ability to determine, by oneself, how to use a principle, rule, or fact to solve a new problem or situation. (The term *applying* is used by the Department to imply outcomes at the understanding and application levels of learning.)

Comprehend or Understand The student develops the ability to: translate materials and ideas; explain or summarize materials; and predict immediate implications or effects on the basis of known facts.

OBE OUTCOME DESIGN

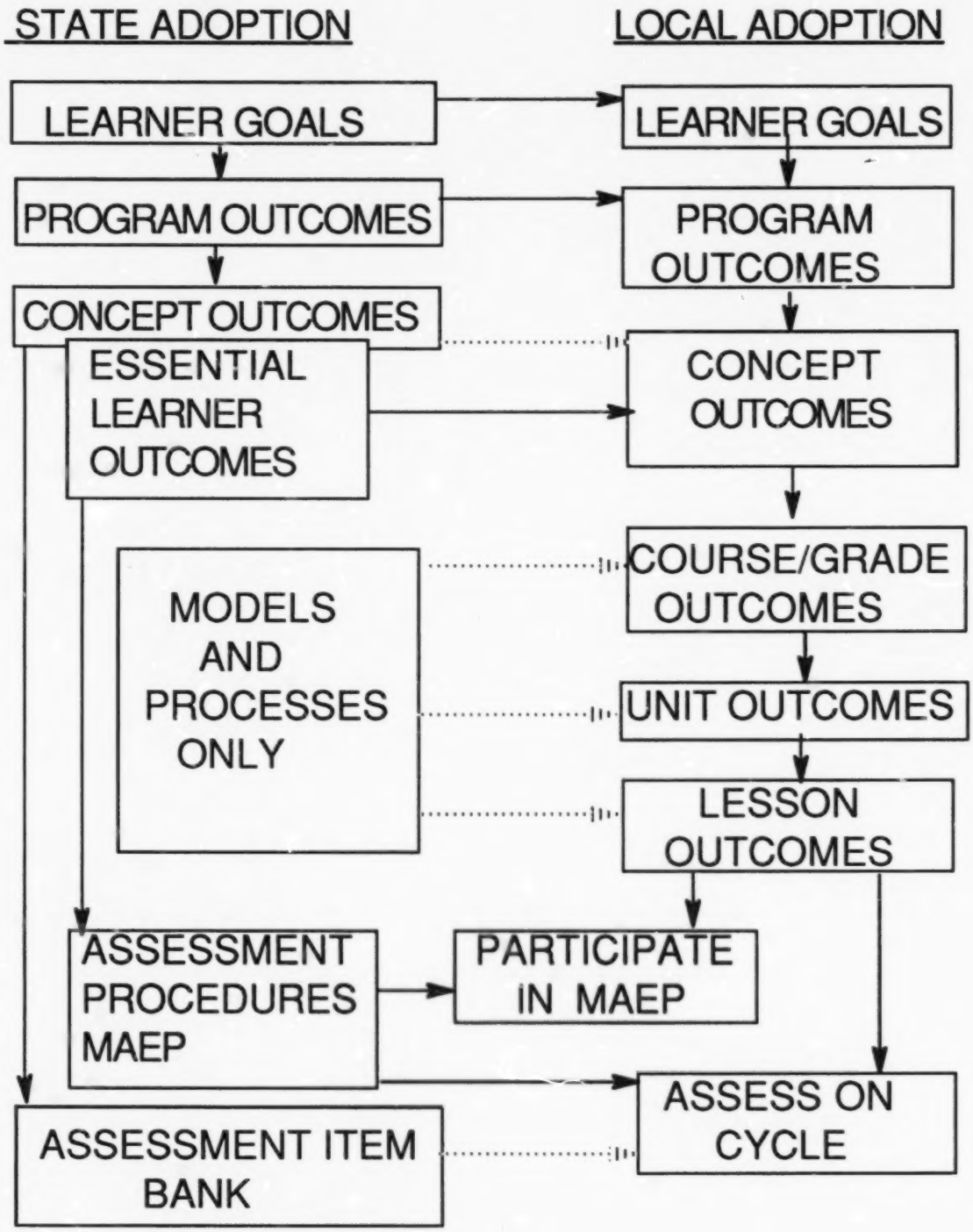

Figure 2

Know, Knowing, Knowledge The student remembers: specific terminology and facts; characteristic ways of treating or presenting ideas and phenomena in the field; and universals and abstractions in the field.

Affective outcomes, at every level of specificity, are included that identify abilities at the following levels:

Values or Valuing The student makes a conscious decision that a thing, phenomenon, or idea has worth and is important and develops a positive predisposition to seek out and act favorably regarding a subject or activity.

Acts on or Actively Responds The student develops a positive predisposition or commitment to act favorably in response to a stimulus regarding a subject or activity.

Aware or Awareness The student is conscious or sensitive to the fact that a certain thing exists and may or may not be positively disposed to attend to that fact.

These terms were adapted from "TEACHING MODELS IN EDUCATION OF THE GIFTED" by C. June Maker. (see References)

Psychomotor outcomes, at every level of specificity, are included that identify abilities at the following levels: *(These outcomes are in developmental stages and may be modified as they are used in a variety of contexts.)*

Integrating The student's psychomotor skills repertoire becomes synthesized into his or her total consciousness, enabling wholistically conceived, created responses to life's task demands.

Applying The student demonstrates ability to execute psychomotor skills from his or her repertoire to meet task demands, but is limited in ability to see any given skill's value beyond the context in which it is put to use.

Knowing The student is aware of psychomotor skills inside and outside his or her repertoire, but is limited in ability to execute skills.

These terms were developed in conjunction with Dr. Leonard Kalakian, Mankato State University, Mankato, Minnesota.

Learner Goal A general statement that describes the knowledge, skill, processes, values, and attitudes that a learner can expect to achieve from active participation in K-12 public education. Learner goals are based on the mission for public education, as adopted by the State Legislature. They are further refined in consideration of the presumed current and future intellectual, social, emotional, physical, and career/vocational needs of contemporary students and adults.

The Minnesota State Board of Education has adopted a set of learner goals. The board of education in each district must adopt a set of learner goals at the district level that incorporates those adopted by the Minnesota State Board.

Program Level Learner Outcomes The learner outcomes that define the scope and intended breadth of study of a subject area. They represent the contribution that the subject area makes to the full range of learner goals.

The State Board of Education has adopted a set of program level learner outcomes for each subject area. Each district must incorporate the program level learner outcomes adopted by the State in each subject area.

Concept Level Learner Outcomes The learner outcomes that are a listing of the primary learnings in the subject area. These outcomes define the "body of knowledge" or the "scope" of the subject area.

Districtwide K-12 committees in each subject area should develop concept outcomes. The Department has developed, or is in the process of developing, models in each subject area for consideration by district staff as they complete their work.

Course/Grade Level Learner Outcomes The compilation of concept level learner outcomes that are assigned/incorporated into the instruction of a specific course or grade. The outcomes for any one course or grade shall be drawn from a number of different subject areas.

Course/grade level learner outcomes should be determined at the building level.

Unit Level Learner Outcomes A series of statements, adopted by a teacher, to define the scope of an instructional unit. The total listing of unit outcomes for any one course or program are the steps through which the course outcomes will be achieved.

Unit level learner outcomes should be developed by the teacher(s) responsible for the course.

Lesson Level Learner Outcomes A series of statements, adopted by a teacher, to define the purpose of a specific lesson. All of the lesson outcomes for a unit outcome make up the steps through which the unit outcome will be achieved.

Lesson level learner outcomes should be developed by the teacher(s) responsible for the course.

Essential Learner Outcomes A sample of the concept level learner outcomes in each subject area. The sample for each is selected on the criteria that: they are central to understanding the subject matter; they are of lifelong importance to the learner; and they are representative of the full range of knowledge through integration of cognitive and affective outcomes.

Essential learner outcomes are adopted by the Minnesota State Board of Education and must be incorporated by each district in its concept outcomes for each subject area.

LEARNER GOALS

DEFINITION Learner goals are a series of statements that describe the knowledge, skill, processes, values, and attitudes a learner can expect to achieve from active participation in K-12 public education. They are based on the mission for public education, as adopted by the State Legislature, and further refined in consideration of the presumed current and future intellectual, social, emotional, physical, and career/vocational needs of contemporary students and adults.

BACKGROUND There is a need to define the exit outcomes, the expected learnings with which students will graduate from public education. As a group, they define the learnings that are to be the result of active participation in a full range of integrated learning experiences. Individually, they are not specific to any single subject area, although historical precedent aligns some of the outcomes with one or more subject area more specifically than with others. Learner goals are not intended to define specific subject knowledge nor are they to be seen as minimum competencies to be required for graduation. The term "learner goals" was selected, rather than exit outcomes (as is used in some of the literature) to reduce confusion caused by many types of learner outcomes.

MEASURABILITY Measurement of student progress toward attainment of learner goals is possible only through aggregating results of student progress toward the program outcomes established as a subset of these goals.

PROGRAM OUTCOMES

DEFINITION

Program level learner outcomes are a series of statements that define the scope and intended breadth of study of a subject area. They represent the contribution that the subject area makes to the full range of learner goals.

BACKGROUND

There is a need to define the outcomes that are the contribution that each specific program makes to the learner goals. At this time, a program is defined as a subject area. While other definitions of program are possible, it will always be necessary to identify the program outcomes for each subject area to assure that the full scope of each is incorporated into the curriculum. The outcomes identified in any one subject area do not align one-to-one with the content of instruction in any one course or program.

The outcomes of programs defined as something other than a subject area, e.g., gifted program, typically incorporate concept level outcomes from a variety of subject areas, as well as outcomes unique to that program. It is not intended that the inference be drawn that learning opportunities can or should only be designed around subject matter titles. Just the opposite, learning opportunities must be designed around a variety of options. Learning opportunities and learner outcomes are not the same. Outcomes define the content and opportunities define the context in which it will be learned. The need here is to define the content.

MEASURABILITY

Like learner goals, program outcomes are not directly measurable. Knowledge of student progress toward program outcomes can only be gained through aggregating the results of assessing student progress toward concept outcomes.

MEASURABILITY The content in many concept level learner outcomes is stated too broadly to be measurable without consideration for the course/grade in which the learning is expected.

CONCEPT OUTCOMES

DEFINITION

Concept level learner outcomes are a listing of the primary learnings in the subject area. These outcomes define the "body of knowledge," or the "scope" of the subject area.

BACKGROUND

There is a need to identify learner outcomes that specify the major concepts that make up each subject area. As a group, the concept outcomes for a subject provide detail to the scope of knowledge, skill, and affect contributed by that subject to the learner goals.

The Department of Education is developing a model learner outcome document for each subject area. These documents are developed as models for district staff and contain, among other things, a chapter for concept level learner outcomes. Except as described below under essential learner outcomes, the concept level outcomes are to be used at the discretion of school districts as each adopts its curriculum. These documents are for the express purpose of identifying the content and the major learnings for each subject area, rather than providing an instructional design.

Criteria for identifying a concept level learner outcome is that each outcome addresses a primary concept within the context of that subject and leads directly to one or more of the program outcomes.

Outcomes are included that identify abilities in the following domains:

- Cognitive
- Affective
- Psychomotor
- Social

ESSENTIAL LEARNER OUTCOMES

DEFINITION Essential learner outcomes represent a sample (not a full curriculum) of the concept level learner outcomes in each subject area and should not be used for any purpose except that defined below. A concept outcome is included in the sample for each subject based on the criteria that: it is central to understanding the subject matter; it is of lifelong importance to the learner; and it is representative of the full range of cognitive, psychomotor, and affective outcomes present in the scope of that subject area.

BACKGROUND The 1987 Minnesota State Legislature directed the State Board of Education to adopt a set of "essential learner outcomes" to be used as the basis for meeting the accountability portions of the PER legislation. Specifically, the essential outcomes for each subject area are:

The basis for the procedures developed for the Minnesota assessment of educational progress.

Included as a part of the curriculum of every school district as each revises its curriculum for the courses it offers.

Assessed by every school district as a part of its curriculum review cycle.

The basis for reporting comparative student learning results in each subject area on each district's review cycle.

Criteria for selection of essential learner outcomes states:

Essential outcomes will be a limited sample (approximately one-third) of the total listing of concept outcomes for each subject area

Each outcome selected will represent a concept central to the subject area

Each outcome selected will be deemed to be of lifelong importance to the student

The complete list of essential outcomes for each subject will be representative of the full range of cognitive outcomes, affective outcomes, and psychomotor outcomes included in the total list of concept outcomes for that subject.

COURSE GRADE OUTCOMES

DEFINITION

Course grade level learner outcomes are a compilation of concept outcomes that are incorporated into the instruction of a specific course or grade. The outcomes for any one course or grade shall be drawn from a number of different subject areas.

BACKGROUND

There is a need to identify the outcomes that are to be attained as a result of participating in any single course. While the literature on outcome based education indicates that sets of course level learner outcomes should be identified as the next level of specificity following program outcomes, the Department believes differently. It is the Department's position that the next level of outcome to be identified should be, as defined above, concept outcomes. Once concept outcomes are identified, combining logical groups of them into courses will result in better integrated curriculum. As a result, the sequence of the instruction in the district may be defined. Such a process allows for decisions to be made regarding which courses are needed rather than starting from a decision that a course is needed, then specifying outcomes to justify its existence. This process also allows for the inclusion of outcomes from a number of subject areas as discussed below.

CURRICULUM INTEGRATION

Historically, the content of a course has been identical to the content of a subject with the same title. Since the vision for education in Minnesota includes the concept that curriculum should be integrated, the assumption that the content of a subject is the same as courses of the same title must be eliminated. Therefore, it is at the course/grade level learner outcome development process that integration must occur. As staff teams at each learning site design the course, grade, program offerings, they must do so with the inclusion of concept outcomes from a variety of subject areas.

MEASURABILITY

Course level learner outcomes should be written in a manner that insures their measurability. In cases where the concept outcomes are too broad or general to be measurable, they must be rewritten or a sub-set must be developed to make them measurable.

UNIT OUTCOMES

DEFINITION Unit level learner outcomes are a series of statements, adopted by a teacher, that define the scope of an instructional unit. The total listing of unit outcomes for any one course or program are the steps through which the course outcomes will be achieved.

BACKGROUND There is a need for each teacher or team of teachers to develop unit outcomes that are a subset of the concept outcomes assigned to the course.

MEASURABILITY Unit level learner outcomes should always be written in a manner that makes them directly measurable.

LESSON OUTCOMES

DEFINITION Lesson level learner outcomes are statements, adopted by a teacher, to define the purpose of a specific lesson. All of the lesson outcomes for a unit outcome make up the steps through which the unit outcome will be achieved.

BACKGROUND There is a need for each teacher to develop lesson outcomes that are a subset of the unit outcomes designed by the teacher. These have been referred to in other contexts as lesson plan outcomes or objectives, and behavioral objectives.

MEASURABILITY Lesson level learner outcomes should always be written in a manner that makes them directly measurable.

GRADUATION REQUIREMENT

DEFINITION An achievement performance standard that must be met by every student awarded a high school diploma.

BACKGROUND The State Board of Education has traditionally maintained rules that require that students earn 15 credits to graduate from a three-year high school. Those credits currently include 3 credits in communication skills, 2 credits in social studies, 1/2 credit in physical education, and 1/2 credit in health. Content of these courses has been a decision left solely to the various school districts. The Board has directed the Department to develop a recommendation for a graduation requirement based on achievement of a set of selected learner outcomes rather than successful completion of a set of courses.

ASSESSMENT AND FEEDBACK

DEFINITION A process for gathering data on student progress toward attainment of outcomes, for purposes of making decisions regarding improving instruction. The process includes procedures for providing appropriate feedback to students, teachers, parents, administrators, and the general public on a timely basis.

INTRODUCTION The major purposes of an assessment/feedback process are as follows (see Figure 3):

1. To systematically gather student performance data which validly reflects what students know and can do. Student performance data is obtained through a variety of testing procedures including:

   a. multiple choice/true-false tests
   b. teacher observation
   c. performance/production
   d. portfolios
   e. simulation

2. To use this information to improve learning for individuals and groups. Decisions regarding program improvements must be based on multiple indicators including:

   a. student performance on pre-determined outcomes
   b. student demographics
   c. teacher skills
   d. system design

3. To provide appropriate reporting of student achievement as follows:

    a. Students and teachers need formative data on an ongoing, often daily, basis for individual student performance. Parents, students, and teachers need periodic summative data on an individual student basis.

    b. Building teams and administrators need summative aggregate multiple indicator data on an annual basis.

    c. District administrators, the Board of Education, the Curriculum Advisory Council, and the K-12 curriculum writing teams need summative aggregate multiple indicator data on the districts curriculum cycle and for "red flag," or special problem cases.

4. The community needs summative aggregate multiple indicator data on a cycle with the district's curriculum review cycle.

There are two primary considerations in the development and adoption of assessment procedures for outcome based education.

The first, content validity, is defined as the extent to which assessment procedures match outcome statements. A judgment process rather than statistics is involved here. The key issue is, "Does this item adequately reflect the outcome?"

The second major consideration is measurement flexibility. It would be completely inappropriate to design a measurement approach that included only paper and pencil objective measures. Assessment measures should not be trivial and should reflect a variety of alternate assessment approaches. The best way to know if a student can write a sonnet is to have them write a sonnet.

Assessment procedures should be adopted at the district level for gathering data regarding student progress toward learner goals and toward program and unit level learner outcomes. Each school and teacher should develop assessment procedures at their level for determining student progress toward course and lesson outcomes.

OBE ASSESSMENT AND FEEDBACK PROCESS

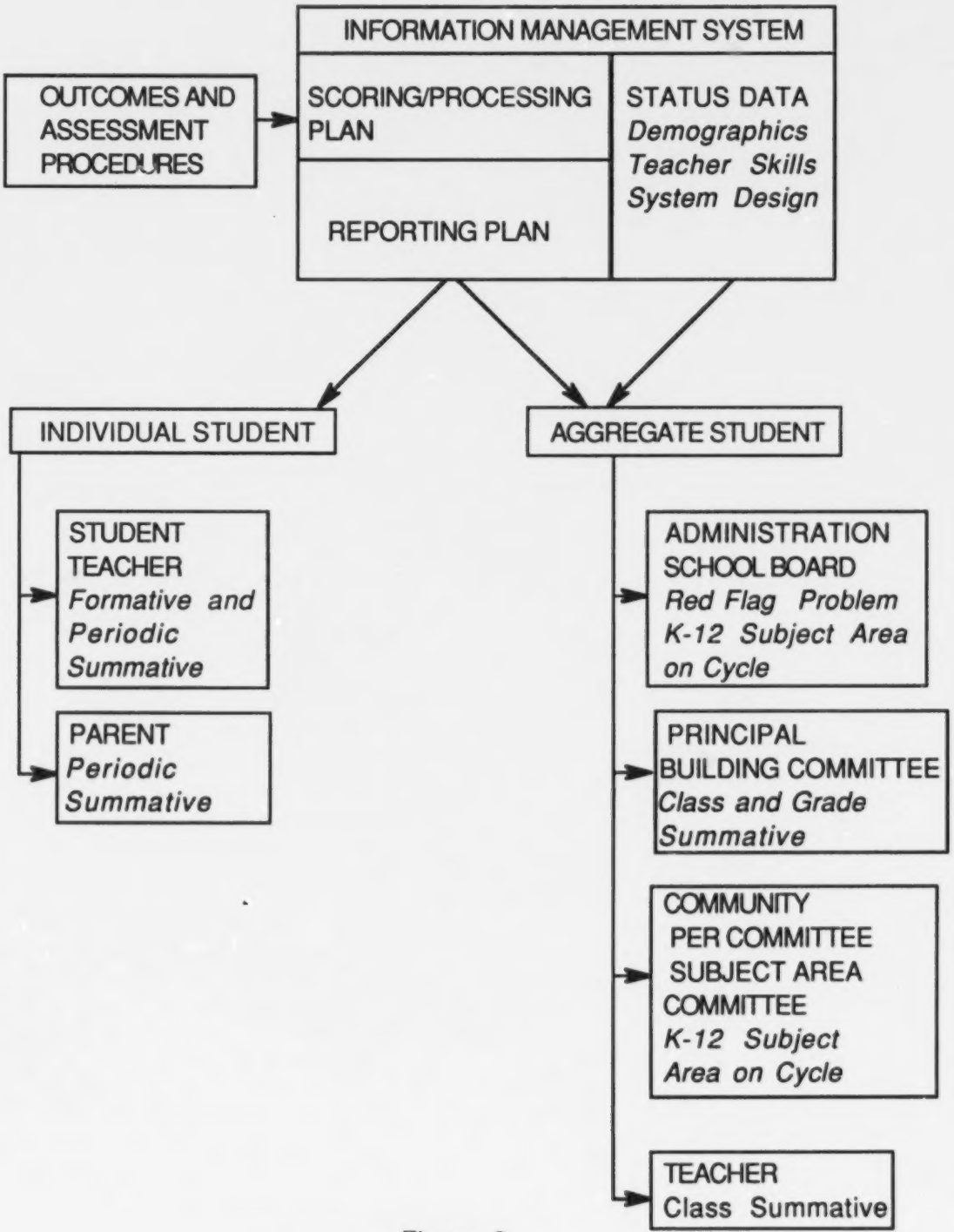

Figure 3

STATEWIDE TESTING

In terms of state development of assessment procedures and reporting results the following applies:

DEFINITION A process for gathering data on students from across the state regarding their progress toward attainment of the essential learner outcomes for purposes of making decisions that affect education statewide.

BACKGROUND The State Legislature has directed that the Department develop a statewide assessment procedure that involves testing a sample of students at three grade levels, from a stratified sample of districts, regarding their achievement on the essential learner outcomes, and reporting those results on a statewide basis.

Districts are required to implement a curriculum review cycle that includes procedures to evaluate and report learning results to their constituencies in each subject area. As each district assesses the subjects for which a statewide test is developed, it must use that test as a part of its total assessment program.

State assessment will be on a four-year cycle, starting in the 1988-89 school year, as follows:

1988-89	mathematics
1989-90	language arts
1990-91	science, health, and physical fitness and wellness
1991-92	social studies and visual art
1992-93	mathematics and music
1993-97	repeat 1990-1993 cycle

In addition, one other subject area or special topic may be assessed on a statewide basis as directed by the State Board of Education or the Legislature.

Assessment items for the essential learner outcomes in all other subject areas will be available in the test item bank developed by the Department so that districts are able to develop assessment procedures to evaluate their programs and report their results as required.

TEST ITEM BANK

DEFINITION The test item bank is a catalog of test items keyed to the concept level learner outcomes in each subject area.

BACKGROUND The Legislature has directed the development of a test item bank. The test items are accessible by teachers for their use in developing daily, weekly, quarterly, mid-term, end of year, or any other tests or assessment procedures needed to determine student progress toward the outcomes. This eliminates the time consuming need for teachers to devise all of the assessment procedures.

INSTRUCTION

DEFINITION A process for providing learning experiences, based on learner outcomes, in which it is assumed that all students can learn and in which learning is the constant and time is the variable. Outcome based instructional design, as recommended by the Department, also assumes that a variety of teaching models, methods, and materials and provisions for extensions and reteaching will be used.

BACKGROUND It is critical to recognize that, by definition, OBE includes three elements: outcomes, instruction, and assessment. Because these elements are related, specific efforts to involve all three aspects of learning must be pursued. While it is imperative that the selection of outcomes may be the starting point, this must be followed closely by the development of assessment procedures which diagnose the students' current level of attainment. This selection of outcomes and diagnosis of student achievement is followed by the design of instructional plans which teach to the objective and respond to the students' current level of accomplishment related to these outcomes. Carefully planned instruction, based on the differing needs of students, is the key and the most important component of the outcome based education model.

The most important single activity is to change the instructional process. The quality of the instructional component is what results in a change in student learning. To ignore this factor is to erode the underlying structure of outcome based education. Initial decisions must be made about outcomes and assessment and a cycle to regularly revisit and improve their definition must be implemented. Most importantly, once a first round of outcomes and assessment procedures are developed, schools must begin making efforts to modify and improve the procedures through which students' progress through instructional programs to achieve the outcomes. (See Figure 4)

OBE INSTRUCTIONAL DESIGN

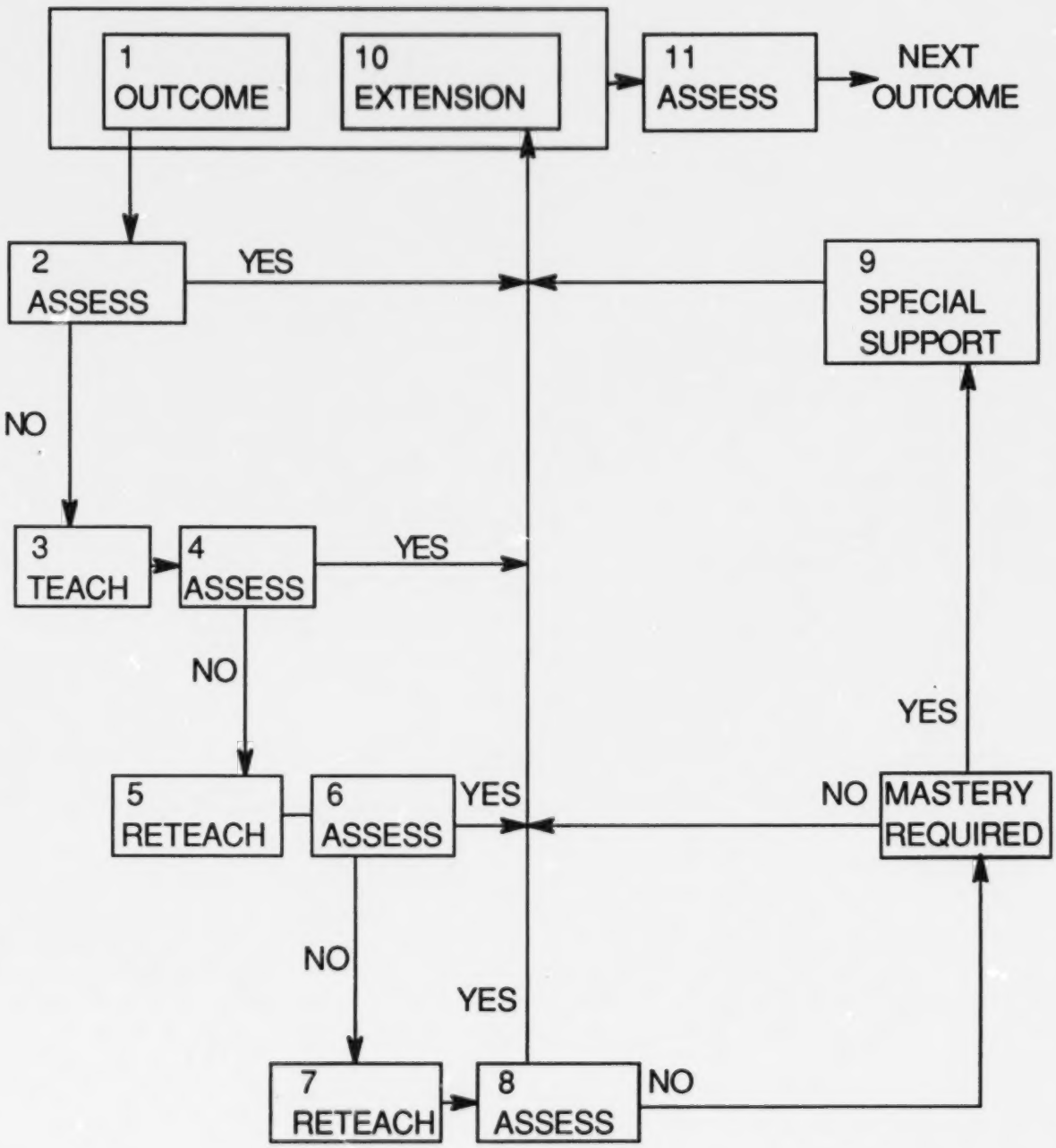

Figure 4

The instructional assessment makes a preliminary judgment about matching the student with appropriate instructional activities. In the assessment process, educators should consider sources of information such as: parental observations, student products, observation, test scores, interviews, questionnaires, and anecdotal records. The intent of the instructional assessment is to insure that students will not be required to participate in learning experiences when they can demonstrate that they know or can do the tasks at the desired level or to be unduly frustrated when asked to do activities for which they have inadequate prerequisites.

INSTRUCTIONAL PLANNING: DESIGNING PLANS TO MOTIVATE AND PROMOTE STUDENT LEARNING

Planning is a process of organization whereby the teacher considers individual learners, selects a model of teaching, identifies resources, and maps out a series of instructional events all aimed at achieving desired learner outcomes. In the planning process, the teacher considers the following components:

- objectives to be obtained
- data gathered during the assessment phase about individual learners from learners, parents, and professional staff; a model of teaching based on a variety of factors, including: the objectives; teaching methods and strategies; the learner's developing capabilities, preferences, and experiences; the physical environment; and the available resources
- identifying, selecting, and organizing appropriate resources;
- media and technology such as: print and non-print materials, computers, production equipment, interactive devices, or other technological tools;
- setting(s) for learning within the school and community and arranging the classroom environment to facilitate social, cognitive, and affective development;

- human resources, such as: parents, experts, volunteers, and paraprofessionals to enhance the learning opportunities; and

- strategies for reinforcement, management of student behavior, and alternative teaching methods and resources.

An integral part of the planning phase is the selection of models of teaching. Within each of the models, the roles of the teacher and students have a slightly different focus. Models of teaching describe the teacher's actions during the implementation phase of instruction and the student's response to the instruction. These models serve to describe the flow of instruction, rather than prescribing an exact plan or approach.

Models of teaching illustrate the teacher's actions and represent a range of teaching methods. These models reflect the amount of teacher and learner choice in what is to be learned and how it is to be learned. They also reflect decisions about what learning itself is about. Learning may be viewed as a product, a process, or both. Prepared with a tentative plan, the teacher moves to the implementation phase with the sure knowledge that assessment and planning will be an ongoing process as the teacher observes and interacts with learners.

See the Department publication Classroom Instructional Design (listed in References) for more detailed explanation of instructional strategies.

INSTRUCTIONAL IMPLEMENTATION: USE OF EFFECTIVE TEACHING STRATEGIES

Implementation is the action phase of instruction where the tentative plan is tested by the learners and the teacher. Teaching is both science and art. The implementation phase may require the teacher to instruct in a non-preferred style, to accommodate a variety of learner characteristics and instructional outcomes, and even to discard carefully laid plans in favor of more appropriate learning opportunities. The teacher's unseen beliefs and attitudes about teaching and about learners influence what happens in the classroom. Although these beliefs and attitudes cannot be observed directly, their indirect effect on classroom climate, student affect, and student performance is observable.

As a result of an initial teaching episode and the teacher's diagnosis of student learning, students may be guided toward different learning paths. Some may continue with the instructional program as initially conceived by the teacher. A smaller number of students may require more intensive practice or additional help to master the outcomes after working through the planned activities. Additional help, time, or alternative teaching strategies provide students with the extra opportunities some need to master the outcomes.

The teacher provides reteaching of the outcome using different models, methods, materials, or time frames. While textbooks are used because they provide a part of the means by which students can achieve the desired outcomes, they are not the curriculum. Alternative materials should be used in the reteaching cycle. Students who do not achieve the desired performance level, rather than simply reporting that the student failed, are not allowed to move on to the next unit or grade level until mastery is achieved.

INSTRUCTIONAL EVALUATION: MAKING JUDGMENTS AND KNOWING WHEN OUTCOMES ARE ACCOMPLISHED

Evaluation is a process of data gathering and decision making about learners, the instructional events, and the educational expectations in order to revise the educational expectations, change the instructional process, or adapt to the learners.

There are two forms of evaluation: formative and summative. Formative evaluation is an ongoing process of data gathering, analysis and decision making which may result in modification of the design process. Summative evaluation is a culminating process aimed at measuring the extent to which the educational expectations were accomplished. Both forms of evaluation are essential to the instructional process.

Formative evaluation is the key to early and continual diagnosis of student achievement during the active phases of learning. Summative evaluation gives feedback to the teaching and provides a description of student accomplishment.

Summative evaluation should provide a "rich" description of student learning and should describe important aspects of learning which have been identified through the outcome development and selection process. This description should provide us with both an evaluation of student knowledge of important content and skills as well as the mastery of outcomes which are more sophisticated in design, such as: problem solving ability, the quality of student writing or evidence of self-directed learning.

There are at least five goals of instructional evaluation:

1. The learner is aware of growth and change and how well he or she is performing in relation to others.

2. The teacher diagnoses, advises, and plans new instruction based on the needs of learners.

3. Parents know how the learner is progressing in relation to the attainment of the educational expectations.

4. Administrators know how well the instructional program is being implemented and identify areas for improvement.

5. The community understands how well the instructional program meets goals identified by the school and community.

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